

HE-67xx Series

# TRUERH™ Humidity Element with Temperature Sensors

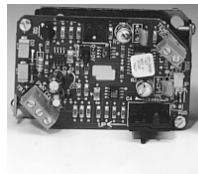
## Description

The HE-67xx Series Humidity devices house both a humidity and a temperature sensor in a wall or duct-mount style. The humidity sensor is capable of measuring Relative Humidity (RH) over the entire range of 0 to 100%, and its All-Polymer™ construction provides improved resistance to chemical corrosion. The TRUERH™ product line delivers devices with RH accuracy of either ±2% or ±3% RH. TRUERH™ humidity elements produce voltage output signals proportional to measured humidity for humidity indication.

Temperature sensors are available in thin-film nickel, thin-film platinum, and silicon. The elements are powered with 14 to 30 VDC or 20 to 30 VAC and feature a user-selectable humidity output of 0 to 10 VDC or 0 to 5 VDC.

## Features

- TRUERH™ circuitry and calibration techniques for which patent protection is pending
- All-Polymer humidity sensor patented sensing element provides accurate and reliable humidity sensing
- tested and calibrated with equipment certified to be in compliance with National Institute of Standards and Technology (NIST) guidelines



HE-67xx-0N0BT Wall Mount



HE-67xx-0N00P Duct Probe

TRUERH™ — True ±2% Accuracy

- ±2% RH accurate model includes test and calibration equipment certificate of calibration conformance
- humidity and temperature sensors in one unit eliminates the need for separate sensors and reduces installation costs
- user-selectable output voltage range allows choice of standard voltage outputs for use with systems in service or new systems
- all-plastic material for duct probe improves thermal performance and complies with Underwriters Laboratories Inc.® (UL) flammability ratings for plenum use; complies with Blue Angel (Germany) and TCO'95 (Sweden) environmental regulations

## Repair Information

If the HE-67xx Series Humidity Element fails to operate within its specifications, replace the unit. For a replacement humidity device, contact the nearest Johnson Controls® representative.

## Selection Charts

### HE-67xx Series Wall Mount Models

Code Number	Description	RH Accuracy	
		±2%	±3%
HE-67P2-0N0BT	Wall mount humidity element with thin-film platinum temperature sensor	■	
HE-67S2-0N0BT	Wall mount humidity element with silicon temperature sensor	■	
HE-67N2-0N0BT	Wall mount humidity element with thin-film nickel temperature sensor	■	
HE-67P3-0N0BT	Wall mount humidity element with thin-film platinum temperature sensor		■
HE-67S3-0N0BT <sup>1</sup>	Wall mount humidity element with silicon temperature sensor		■
HE-67N3-0N0BT	Wall mount humidity element with thin-film nickel temperature sensor		■

1. Compatible with System 350™ Humidity Controls

### HE-67xx Series Duct Probe Models

Code Number	Description	RH Accuracy	
		±2%	±3%
HE-67P2-0N00P	Duct probe humidity element with thin-film platinum temperature sensor	■	
HE-67S2-0N00P	Duct probe humidity element with silicon temperature sensor	■	
HE-67N2-0N00P	Duct probe humidity element with thin-film nickel temperature sensor	■	
HE-67P3-0N00P	Duct probe humidity element with thin-film platinum temperature sensor		■
HE-67S3-0N00P <sup>1</sup>	Duct probe humidity element with silicon temperature sensor		■
HE-67N3-0N00P	Duct probe humidity element with thin-film nickel temperature sensor		■

1. Compatible with System 350™ Humidity Controls

### Accessories for HE-67xx Wall Mount Models<sup>1</sup>

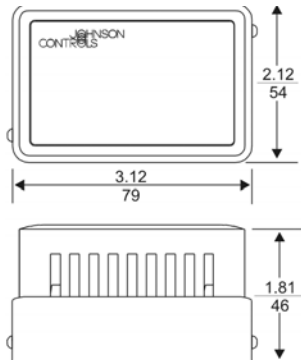
Code Number	Description
GRD10A-608	Plastic Guard with Baseplate and Mounting Ring
T-4000-119	Allen-head Tool (30/bag)
TE-1800-9600	Wall Plate Adaptor Kit required for wallbox mounting

1. Accessories are available for the wall mount model only.

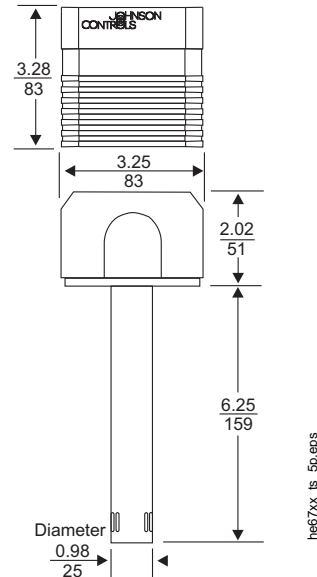
## HE-67xx Series TRUERH™ Humidity Element with Temperature Sensors (Continued)

### Technical Specifications

HE-67xx Series TRUERH™ Humidity Element with Temperature Sensors	
<b>Power Requirements</b>	
14 to 30 VDC or 20 to 30 VAC at 50/60 Hz, Class 2	
<b>Current Draw</b>	
3 mA with no load, 25 mA maximum	
<b>Acceptable Wire Gauge</b>	
16 to 24 AWG (18 AWG recommended)	
<b>Humidity Element at 77°F (25°C)</b>	<b>Signal</b>
	0 to 5 VDC or 0 to 10 VD, 1,000 ohm maximum load
	<b>Accuracy</b>
	HE-67x2: ±2% RH for 20 to 80% RH at 77°F (25°C) ±4% RH for 10 to 20% and 80 to 90% RH at 77°F (25°C) HE-67x3: ±3% RH for 20 to 80% RH at 77°F (25°C) ±5% RH for 10 to 20% and 80 to 90% RH at 77°F (25°C)
<b>Temperature Coefficient</b>	
0.1 to 0.05% RH/°C at 5°C (41°F) to -0.07 to -0.21% RH/°C at 65°C (149°F)	
<b>Response Time</b>	Within 5% RH of actual in 15 minutes for 10 to 30%, 30 to 90%, and 40 to 90% RH
<b>Temperature Sensors</b>	<b>Thin-film Nickel</b>
	Accuracy: ±0.34°F (0.18°C) at 70°F (21°C) Reference Resistance: 1000 ohms at 70°F (21°C) Resistance Change: Approximately 3 ohms/°F (5 ohms/°C)
	<b>Silicon</b>
Accuracy: ±1°F (0.6°C) at 70°F (21°C) Reference Resistance: 1035 ohms at 77°F (25°C) Resistance Change: Approximately 4 ohms/°F (8 ohms/°C)	
<b>Thin-film Platinum</b>	
Accuracy: ±0.65°F at 70°F (±0.36°C at 21°C) Reference Resistance: 1000 ohms at 32°F (0°C) Resistance Change: Approximately 2 ohms/°F (4 ohms/°C)	
<b>Electrical Connections</b>	
3-position and 2-position screw terminal blocks	
<b>Ambient Operating Conditions</b>	
32 to 140°F (0 to 60°C) 0 to 100% RH, 85°F (29.4°C) maximum dew point	
<b>Survival Operating Conditions</b>	
-20 to 140°F (-29 to 60°C) 0 to 100% RH, 85°F (29.4°C) maximum dew point	
<b>Ambient Storage Conditions</b>	
-40 to 140°F (-40 to 60°C) 0 to 100% RH, 85°F (29.4°C) maximum dew point	
<b>Materials</b>	<b>Wall Mount</b>
	Beige plastic cover with metal base and metal foil face plates
<b>Duct Probe</b>	White plastic cover with dark gray plastic housing and probe
<b>Dimensions</b>	<b>Wall Mount (H x W x D)</b>
	1.81 x 2.12 x 3.12 in. (46 x 54 x 79 mm)
	<b>Duct Probe (H x W x D)</b>
3.28 x 3.25 x 8.27 in. (83 x 83 x 210 mm) Probe (L x D): 6.25 x 0.98 in. (159 x 25 mm)	
<b>Agency Compliance</b>	<b>Duct Probe Material</b>
94-5V flammability rated per UL 94	



Wall Mount Humidity Element Dimensions, in. (mm)



Duct Probe Humidity Element Dimensions, in. (mm)